

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A process for electrodepositing copper from an electrolyte solution containing a metal in ionogenic form, the process comprising:

passing an electrolyte through an electrolysis plant comprising at least one electrolytic cell having an electrolyte tank for receiving the electrolyte which includes at least one electrode serving as an anode and at least one electrode serving as a cathode, the electrodes being alternately arranged at a distance from each other, each of the anode and the cathode including a hanger bar with a first end and a second end;

distributing current between the anode and the cathode by providing a first contact bar and a second contact bar at an edge of the electrolyte tank, each of the contact bars being connected to a power source, the first end of the hanger bar of the cathode resting on the first contact bar via a two-line contact and the first end of the hanger bar of the anode resting on the second contact bar via a two-line contact, the second end of the hanger bar of the cathode resting on a cathode equalizer bar disposed on one of the contact bars and the second end of the hanger bar of the anode resting on ~~a cathode~~ an anode equalizer bar disposed on one of the contact bars; and

immersing, during operation of the electrolysis, the at least one cathode into the electrolyte over a length of at least 1.2 meters.

Claim 2 (Original): The process as claimed in claim 1, wherein during operation of the electrolysis the at least one cathode is immersed into the electrolyte over a length of about 2 meters or another integral multiple of one meter.

Claim 3 (Previously Presented): The process as claimed in claim 1, wherein during operation of the electrolysis the at least one cathode is immersed into the electrolyte with a cross-sectional area of 2 square meters.

Claim 4 (Previously Presented): The process as claimed in any of the claim 1, wherein the at least one electrolytic cell has more than 60 cathodes.

Claim 5 (Previously Presented): The process as claimed in claim 1, wherein the electrolysis is performed at a current density of more than 200 A/m².

Claim 6 (Cancelled).

Claim 7 (Previously Presented): The process as claimed in claim 1, wherein the contact bars each have an at least substantially trapezoidal indentation on which rest the respectively first ends of the hanger bars with a contact surface having an at least substantially rectangular cross-section.

Claim 8 (Previously Presented): The process as claimed in claim 1, wherein the hanger bar has a sheath surface made of steel and a core made of copper.

Claims 9 and 10 (Cancelled).

Claim 11 (Previously Presented): The process as claimed in claim 1, wherein the contact bars and/or the equalizer bars or the intermediate contact bars are water cooled.

Claim 12 (Original): The process as claimed in claim 11, wherein the bars to be cooled are cooled by passing cooling water through a cooling water channel provided in the contact bars.

Claim 13 (Original): The process as claimed in claim 11, wherein the cooling water is passed through the cooling water channel in a turbulent flow.

Claim 14 (Original): The process as claimed in claim 11, wherein the contact bars to be cooled have two separate cooling circuits, one of which (primary circuit) is at least partly provided in the contact bars to be cooled, and which are both connected with each other by a heat exchanger.

Claim 15 (Original): The process as claimed in claim 14, wherein the primary circuit is fed with purified water and the second cooling circuit (secondary circuit) is fed with crude water.

Claim 16 (Original): The process as claimed in claim 14, wherein in the at least one electrolytic cell a fluid distributor is provided, through which during operation of the electrolysis electrolyte solution, gas bubbles or a mixture of electrolyte solution and gas bubbles are introduced into the electrolytic cell.

Claim 17 (Original): The process as claimed in claim 16, wherein the fluid distributor is disposed at the lower end of the electrolytic cell and that the fluid is introduced into the electrolytic cell through the distributor below or at about the level of the lower end of the electrodes.

Claim 18 (Original): The process as claimed in claim 16, wherein the fluid distributor consists of two tubes arranged substantially parallel to the longitudinal sides of the electrolytic cell, which at their surface each have one or more fluid outlet holes and whose first ends are each connected with a fluid supply conduit.

Claim 19 (Previously Presented): The process as claimed in claim 16, wherein the fluid distributor has about 1 to 5 fluid outlet holes per electrode pair and cell side provided in the electrolytic cell, whose arrangement is substantially adjusted to the spaces between the electrodes.

Claim 20 (Previously Presented): The process as claimed in claim 16, wherein the fluid outlet holes of the fluid distributor are of substantially circular shape and have a diameter of 1 to 10 mm.

Claim 21 (Original): The process as claimed in claim 16, wherein each electrolytic cell has two electrolyte outlets.

Claim 22 (Original): The process as claimed in claim 16, wherein the cathodes have an indentation of V-shaped cross-section at their lower longitudinal edge.

Claim 23 (Withdrawn): An electrolysis plant for electrodepositing copper from an electrolyte solution containing the metal in ionogenic form, in particular for performing a process as claimed in claim 1, comprising at least one electrolytic cell which includes an electrolyte tank for receiving the electrolyte, at least two electrodes serving as anode and cathode, which are alternately arranged at a distance from each other and each have a substantially horizontal hanger bar, as well as two contact bars arranged at the edge of the electrolyte tank, which each have a contact bar connectable to a power source, where the at least one cathode has a first end of its hanger bar rest on one of the two contact bars and the at least one anode has a first end of its hanger bar rest on the other one of the two-contact bars, wherein the first ends of the hanger bars each rest on the contact bars via a two-line contact, and that on at least one of the

two contact bars at least one equalizer bar is provided, on which rests a second end of the hanger bars of the cathodes and/or anodes.

Claim 24 (Withdrawn): The electrolysis plant as claimed in claim 23, wherein on each of the two contact bars at least one equalizer bar is provided, the respectively second end of the hanger bars of the cathodes resting on one of the two equalizer bars and the respectively second end of the hanger bars of the anodes resting on the other equalizer bar.

Claim 25 (Withdrawn): The electrolysis plant as claimed in claim 23, wherein the contact bars each have a substantially trapezoidal indentation, on which rest the respectively first ends of the hanger bars of the electrodes with a contact surface having a substantially rectangular cross-section.

Claim 26 (Withdrawn): The electrolysis plant as claimed in claim 23, wherein at least in one of the contact bars, the equalizer bars and/or the intermediate rails a cooling water channel is provided.

Claim 27 (Withdrawn): The electrolysis plant as claimed in claim 26, wherein the cooling water channel has a diameter of 15 to 20 mm.

Claim 28 (Withdrawn): The electrolysis plant as claimed in claim 26, wherein for supplying water the conductor bars having a cooling water channel is connected with a tube made of PVC or a hose made of vinyl material.

Claim 29 (Withdrawn): The electrolysis plant as claimed in claim 26, wherein two separate cooling circuits, one of which (primary circuit) is at least partly provided in one of the conductor bars to be cooled, both cooling circuits being connected with each other by a heat exchanger.

Claim 30 (Withdrawn): The electrolysis plant as claimed in claim 29, wherein the primary circuit comprises a water expansion tank.

Claim 31 (Withdrawn): The electrolysis plant as claimed in claim 29, wherein, inside the electrolytic cell, particularly preferably at the bottom inside the electrolytic cell, a fluid distributor is provided.

Claim 32 (Withdrawn): The electrolysis plant as claimed in claim 31, wherein the fluid distributor consists of two tubes arranged substantially parallel to the longitudinal sides of the

electrolytic cell, which at their surfaces each have one or more fluid outlet holes and whose first ends are each connected with a fluid supply conduit.

Claim 33 (Withdrawn): The electrolysis plant as claimed in claim 31, wherein the fluid distributor has about 1 to 5, particularly preferably about 1-2 fluid outlet holes per electrode pair provided in the electrolytic cell, whose arrangement is substantially adjusted to the spaces between the electrodes, which particularly preferably have a circular shape and a diameter of 1 to 10 mm, particularly preferably 5 to 7 mm, and in particular about 6 mm.